W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

Fred Maia, W5YI, Editor, P.O. Box 565101, Dallas, TX 75356-5101

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FCC SHUTS DOWN SEA GOING HAM PIRATE

Officials from the U.S. Coast Guard and the FCC's Vero Beach, Florida Field Office have stopped, boarded and shut down an unlicensed amateur station operating in Florida waters aboard the fifty foot wood-hulled sailing vessel, the Baltija. The Commission originally got involved due to complaints from the amateur community about transmissions from a station using the call sign: KD4VQ.

The ham pirate, later identified as Peter Skujins with no known home address, lived aboard his vessel. Skujins, who used the name "Gil" on the ham bands, apparently had been operating illegally on 20 meters for some two years. The FCC's monitoring network had long believed the station was operating from a boat due to its triangulated signal position placing its transmissions at various locations along the Atlantic coast waterway.

"Gil" seemed to be particularly infuriated with Herb Schoenbohm, KV4FZ and BARF, the controversial Better Amateur Radio Federation. He would harass and jam them at 14.313 and 14.315 by making constant announcements on behalf of the Intercon Net which operates at 14.300. Intercon is the Inter-Continental Phone Patch Network. KV4FZ even offered a $500 reward for information leading to KD4VQ's apprehension. That earned Schoenbohm an Official Observer Notice for using the airwaves for pecuniary interests.

"Gil's" vessel was home based in New England but made trips up and down the east coast, stopping from time to time at port cities. The KD4VQ call sign he used was originally assigned to a William A. Hiott of Anderson, S.C. who is no longer licensed and may even be a silent key.

Once it was determined that KD4VQ was not a valid call sign, the FCC monitoring network began observing this station and did so for more than a year. At one point last year the KD4VQ transmissions were pin pointed to the West Palm Beach area. Both the FCC's Field Office in Miami and Vero Beach attempted to locate the station but was unable to do so due to the short transmissions.

This past Spring the pirate station departed Florida and was tracked to a mooring location in the Connecticut area. During the last month or so, however, KD4VQ was observed by the FCC's monitoring network to be back transmitting on 14.313 and making his way back down to Florida.

The FCC's HF monitoring net was activated a number of times and provided bearings on the whereabouts of the station. The FCC's Norfolk office tried unsuccessfully last month to locate the floating station when it was determined the transmissions were coming from the Chesapeake Bay area of Virginia.

The unlicensed transmissions continued and with the assistance of amateurs, the FCC initiated an "on scene" investigation. Through a

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concocted story, amateurs operating on 14.313 tricked "Gil" into appearing on the air at a specific time. The FCC's watch officer in Washington was notified of the schedule allowing the FCC's HF monitoring network to get a good fix on KD4VQ.

Vero Beach, Engineer-in-Charge, Bob McKinney arranged with the Coast Guard to stop and board the vessel. The Coast Guard technically stopped the boat for a Coast Guard safety inspection but it was at the FCC's request. Once the Coast Guard secured the boat, McKinney and FCC Engineer Larry Sowers completed an FCC station inspection.

"We had been watching him come down the intercoastal waterway for the last couple of weeks. When he laid over in Daytona Beach a couple of nights, we coordinated with two different Coast Guard operations - one in Port Canaveral, the other in Ponce de Leon Inlet," McKinney told us. "We were on our way to Daytona Beach where we thought he was located and we discovered he was underway so I called the Coast Guard base. They provided us with transportation and a boarding party. We caught him right at the Coronado Bridge in New Symrna Beach getting ready to go through the draw bridge. We followed him through and the Coast Guard did the boarding."

"The boat was equipped with a Kenwood TS-440 amateur rig which the operator was not licensed to operate and HF whip and dipole antennas. When the transceiver was turned on, it immediately came on at 14.313 MHz." The FCC also found that the operator had an expired Marine Radiotelephone license.

The FCC did not have a search warrant or a seizure order so the equipment was not confiscated "Our main concern at this point was just to get the operation stopped." Skujins refused to answer any questions about the KD4VQ transmissions. McKinney made an unusual shut-down announcement on 14.313 which has been very well publicized on the amateur airwaves. The Coast Guard found other ship board violations and issued citations. They let Skujins proceed on his way after detaining him for about two-and-a-half hours.

By press time, the FCC had not released information on their future path of action. Peter Skujins was directed to telephone the FCC Field Office in Vero Beach once he got to his destination and to provide some means by which he could receive mail. If Skujins fails to obey, then he will be apprehended by the Coast Guard.

KB7JGM's "EARTHWINDS" BALLOON DAMAGED!

On Thursdayt evening, November 19th, "Project EARTHWINDS" suffered another major and possibly fatal setback! EARTHWINDS is the around-the-world manned helium balloon flight that was postponed last March when inclement weather forced a delay.

EARTHWINDS, the most ambitious manned balloon flight ever attempted, is the creation of ***Larry Newman, KB7JGM,*** of Scottsdale, AZ, who has crossed both the Atlantic and Pacific ocean in previous, record-breaking flights. This time, with crew members Vladimir Dzanibekov and Don Moses, he was to attempt to circle the globe at an altitude of 35,000 feet.

Through the efforts of Bill Brown, WB8ELK, Bob Rau, N8IYD, and Judd Nichols (a new technician licensee) an amateur radio beacon was to be carried onboard EARTHWINDS. The ten meter digitized voice beacon is somewhat similar to those of DOVE's planned transmissions. Bill digitized his own voice on a chip with a vocabulary of 19 words ...enough for the GPS (global positioning system) to transmit "KB7JGM EARTHWINDS" and then read out the balloon's latitude, longitude and speed in knots on 28.303 MHz every half hour.

The 10-meter band was chosen for the beacon because Larry holds a Novice class license. 28.303 MHz is also used on Tuesdays and Thursdays at 1200 EST for an All-School's Net and many schools were to follow the flight using materials provided by the ESPN cable TV network. ESPN planned to cover the launch live with nightly reports during the flight. KB7JGM did not intend to make any QSOs from the balloon due his full-time job of keeping EARTHWINDS aloft and amateurs were asked to not call KB7JGM on its beacon frequency.

EARTHWINDS in its entirety consists of a 140 ft tall zero-pressure helium balloon from which a 25 ft x 10 ft enclosed pressurized gondola hangs. Below the gondola, a 100 ft diameter variable pressure compressed air balloon acts as ballast. Several tanks of liquid helium will replace helium lost during the flight. The journey was expected to take 11 to 22 days depending on windspeed.

Using new British Telecom compression equipment weighing only 8 pounds and using 17 watts of power, the crew was to broadcast a live update daily on ESPN at 7 p.m. The TV unit converts sound and video into digital data that can be transmitted from the gondola to INMARSAT, a satellite network used for maritime voice and data communications. A one-hour special entitled "Expedition Earthwinds: Balloon Around the World" was to be aired at the end of the flight.

On Thursday evening, November 19, disaster struck! The inflatable dome housing the anchor balloon and much of the gear for the launch ripped open. Some 50 people inside got out as the dome collapsed

completely freeing the fully inflated 100-π diameter anchor balloon. It rolled a half mile into the desert ...ripped and deflated. A new anchor balloon will take 4 to 6 weeks to construct. The crew is reevaluating the use of the inflatable dome and may go without it.

TEXAS BALLOON FLIGHT SCHEDULED

The North Texas Balloon Project plans to launch it's second weather balloon carrying amateur radio on December 12th, 1992 at around 1500 UTC. A great deal of improvements have been made since the first launch a year ago.

Flight stability has been of major importance and the second mission will look very different. First, the package enclosure will be a capsule shape which will reduce cross-wind induced spin and transfer center-of-gravity towards the bottom of the package. Second, a hemispherical shaped parachute with an airflow hole in the top-center was constructed to increase parachute stability. And last, a balloon-to-payload separation function has been incorporated to allow the package, parachute, and radar reflector to be cut away from the balloon prior to balloon burst. Hopefully, this will prevent the balloon remains from tangling up with the parachute as happened on the first mission.

The second mission will include the following subsystems: The 2m subsystem will transmit 700mW FM on 144.29 MHz through a dipole antenna. The information will be transmitted every 64 seconds in two 32 second segments. A digital voice recorder will provide station identification and QSL information during the first 32 seconds. The second 32 seconds will be used for telemetry and is divided into four 8 second segments. Telemetry will be in the form of audio tones whose frequency will yield battery voltage, inside temperature, altitude, and outside temperature, in that order.

The 10m subsystem will transmit 40mW AM on 28.322 MHz through a dipole antenna. The information transmitted will be identical to that of the 2m subsystem. The 10m subsystem will also have an emergency battery supply so that the package may still be retrieved in the event of a failure of the main lithium battery pack. Bill Brown, WB8ELK, donated the 10m AM Fireball transmitter.

The cut down system will utilize a 70cm radio and a dipole antenna. The remainder of the details of this subsystem are being kept confidential. A 35mm still camera will take a photograph every 4 minutes throughout the flight. The camera shutter will be activated by a homebrew timer circuit.

A launch net will be held on a 40m frequency of 7.155 MHz (+/- QRM) and will be in session prior to launch and throughout the mission, including recovery. The NCS will be Keith Pugh, W5IU. If you would like an information package describing the flight payload, including telemetry decoding graphs and equations, please send an SASE with two units postage to Doug Howard - KG5OA, 2517 Coldstream Drive, Fort Worth, Texas 76123.

CHRONIC OFFENDER DENIED HAM RADIO LICENSE

The FCC's Review Board has affirmed a Private Radio Bureau decision to deny an amateur radio operator license to ***Richard A. Burton, ex.WB6JAC,*** 48 of Harbor City, California. (See *W5YI Report* 10/1/92, page 4)

On September 11, 1981, the FCC revoked Burton's WB6JAC amateur station license and affirmed the suspension of his operator license because of his willful and repeated violations. Burton was later found in federal court on three separate occasions to have transmitted in the amateur service without a Commission license. He was convicted on four counts of transmitting with a license and two counts of transmitting obscene language.

The obscene language conviction was later overturned on First Amendment grounds. His 4 year sentence was reduced to 6 months confinement to be followed by 5 years probation. The Burton sentence was later modified to include therapy when he was again found on the ham bands operating without a license.

In 1991, Burton applied to become an amateur radio licensee. The FCC designated the matter for a hearing to determine if he had the basic qualifications to become a Commission licensee and whether the grant of his application "...would serve the public interest, convenience and necessity."

Burton was asked to respond within 30 days and when he did not, the FCC moved to dismiss the application by Summary Decision. Burton did finally respond, but two weeks after the deadline. By then the judge had already ruled for the FCC. Burton then appealed to the FCC's Review Board saying that he was not given adequate time to answer.

The FCC Review Board has now ruled that the FCC has committed no errors and that Burton was afforded adequate time to respond to the Notice of Hearing. In a November 12th decision, the Review Board confirmed the administrative law judge's denial of Burton's application for an amateur station and operator license.

Burton's troubles are starting all over again. A couple of months ago, Burton was again indicted for making illegal amateur radio transmissions on May 5, May 20 and July 6, 1992. He pleaded innocent and

was ordered to return for trial on November 10th.

The trial has now been postponed for two weeks, too late for our deadline. Burton will be tried in Federal District Court in Los Angeles before Justice Liu. The case number is R-92801ARSWL. It is our understanding that Burton has requested a jury trial and will be represented by counsel rather than a Public Defender as previously was the case.

HAM LOSES TICKET OVER SATELLITE JAMMING

In an unrelated enforcement proceeding, the FCC's Field Operation's Bureau has now canceled the General Radiotelephone and Amateur Advanced Class radio operator licenses of ***Thomas M. Haynie, WB4PVK.*** The action was taken in light of Haynie's 1990 conviction of intentionally jamming a communications satellite and replacing its transmission.

Using a powerful uplink satellite transmitter, Haynie replaced a Playboy Channel skin flick with a religious message urging viewers to repent. Found guilty, Haynie was sentenced to three years imprisonment (which was suspended), fined $3,000 ($2,000 suspended) and ordered to perform 150 hours of community service over a three year period. After Haynie's unsuccessful appeal, the FCC moved to strip him of his amateur and commercial radio operator licenses. A "Show Cause" order was issued last July.

Haynie chose not to request a hearing although he did submit a written statement on August 4th. He said he was not a habitual offender, had no previous record of violation and was capable of operating under FCC Rules and guidelines. Haynie said he realized the seriousness of the offense and that he was particularly concerned about his ham ticket. He did not address the loss of his commercial radio operator license. Haynie pointed out that the violation did not involve his amateur station which he has properly operated for over 25 years. He said he obtained his license "...at an early age" and "...cherishes it dearly."

The Field Operations Bureau ruled, however, that "Mr. Haynie's arguments are unpersuasive" and that they could not "...justify a conclusion that Mr. Haynie is likely to abide by the Rules in the future." The FCC said that Mr. Haynie's reference to the public interest served by licensed amateur operators is insufficient to outweigh the evidence which establishes his lack of required character qualifications.

"The Communications Act gives the FCC authority to suspend a radio operator's license for violating, causing, aiding or abetting the violation of any Act or treaty of the United States [and] for willfully or maliciously interfering with any other radio communications or signal." The revocation is effective immediately.

AMATEUR RADIO CALL SIGNS

...issued as of the first of November 1992:

Radio District	*Gp."A" Extra*	*Gp."B" Advan.*	*Gp."C" Tech/Gen*	*Gp."D" Novice*
Ø (*)	AAØKO	KGØBQ	NØUMM	KBØKTT
1 (*)	AA1EJ	KD1LA	N1NRO	KB1ALH
2 (*)	AA2LL	KF2LA	N2STS	KB2PNP
3 (*)	AA3CH	KE3FK	N3NOO	KB3AJL
4 (*)	AC4WU	KQ4IG	(***)	KD4TWT
5 (*)	AB5IY	KJ5GB	(***)	KB5VWB
6 (*)	AB6OV	KN6CN	(***)	KD6OSU
7 (*)	AA7SE	KI7HQ	(***)	KB7QNG
8 (*)	AA8JC	KF8XP	N8VZO	KB8OJC
9 (*)	AA9FC	KF9MA	N9RIE	KB9IFD
N.Mariana Is.	AHØP	AHØAL	KHØAY	WHØAAT
Guam	NH2J	AH2CR	KH2GL	WH2ANB
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii	(**)	AH6ME	WH6JN	WH6CQA
Kure Is.			KH7AA	
Amer. Samoa	AH8G	AH8AE	KH8AI	WH8ABB
Wake W.Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska	(**)	AL7ON	WL7GN	WL7CGF
Virgin Is.	NP2U	KP2CA	NP2FZ	WP2AHT
Puerto Rico	(**)	KP4UK	(***)	WP4LND

CALL SIGN WATCH: *=All 2-by-1 "W" prefixed call signs have been assigned in all radio districts. Group "A" 2-by-2 format call signs from the AA-AK block are next assigned to Extra Class amateurs when 2-by 1's are all allocated.

**=All Group A (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico. Group "B" (2-by-2) format call signs are assigned to Extra Class when Group "A" are depleted.

***=Group "C" (1-by-3) call signs have now run out in the 4th, 5th, 6th, 7th and Puerto Rico call districts. According to the rules (adopted by the Commission Feb. 8, 1978, Docket No. 21135), Technician/General class amateurs are next assigned Group "D" (2-by-3 format) call signs when all Group "C" have been assigned.

Upgrading Novices holding a 2-by-3 format call sign in the 4th, 5th, 6th, 7th and Puerto Rico call areas will no longer be able to request a Group "C" call and will be automatically assigned another more recent 2-by-3 format call sign if they do! The FCC will not be going back and reassigning unused "K" and "W" 1-by-3 format call signs.

[Source: FCC, Gettysburg, Pennsylvania]

PC REPORT - The Shift to Consumer Electronics

During mid-November, ***Advertising Age*** - a leading weekly trade journal, published a massive report on the ***current state of the personal computer industry.*** The purpose of the study is to assist advertising agencies in providing their service to PC marketers. The analysis was based on data collected from many of the nation's leading market research firms. The primary message conveyed is that the personal computer business is changing. Another publication ***(Inc. Magazine*** which goes primarily to corporate executives) also published a November survey of the PC marketplace. Some of the points they make might help you in making a decision on buying a PC! In any event, it made interesting reading ...and contained some surprises!

The ***personal computer has become a consumer electronics item.*** High-volume corporate sales are slowing. The main thrust is now to home and small business customers. Non-computer stores, mass merchandisers and especially direct-mail sellers will provide the most sales through a strategy of low-margin, low-price.

The top three brands - No. 1 IBM, No. 2 Apple and No. 3 Compaq - now have promotionally priced lines *(ValuPoint, Performa and ProLinea)* that take advantage of their name brand image. All three are sold at mass merchandisers (like *Sears, Roebuck & Co.)* and at major electronics retailers such as *Circuit City,* the nation's largest. Sales are good - as long as they are within "striking distance" of PC clones.

TV advertising made sense in the 1980's but with retail prices "pared to the bone", print advertising is better at conveying today's selling points - price and product details. Ad dollars are tight in consumer electronics due to greatly reduced profit margins.

Packard Bell pioneered the strategy of selling PC's in electronics stores, mass merchandisers and in electronics stores through a system of co-op advertising and no national advertising. Increased widespread distribution through mass outlets and competing on price is now more important than national advertising. Packard Bell now commands the No. 5 spot among U.S. PC marketers with a 3% share of the 11 million PCs sold annually.

In 1990, national computer chains were the dominant marketer of computers with a 35% share. ***Sales by mail order will surpass their sales volume by mid-1993.*** By 1995, mass merchandisers and computer superstores will quadruple their market share (from 5% to 20%) - but their combined share will still be less than that of direct mail sales (29%). The shift in distribution will come at the expense of the regional and national dealers, "direct from the manufacturer" and value-added resellers.

U.S. computer superstores (such as *CompUSA)* are expanding into Europe. Tandy plans an aggressive expansion into Europe and has already opened three *Computer City Superstores* in Scandinavia. In general, PC products are 50% to 100% higher priced than in the U.S. and it is too early to predict the success of computer superstores outside of the United States.

The two dominant companies in computer-magazine publishing are Ziff-Davis Communications and IDG, International Data Group. Their combined revenues exceed $1 billion. Their primary publications are (IDG) *MacWorld, InfoWorld* and *Computerworld* and (Ziff) *PC Magazine, PC Computing* and *Corporate Computing.* Each owns a computer market research company that tracks computer demand/-supply. The nation's largest PC magazines in number of pages (*Computer Shopper, PC Sources* and *Computer Monthly*) receive most of their support from direct marketers. Circulation has doubled in two years and ad sales are increasing by 20% a year. None foresee a slowing in growth because of multi-channel marketing. They report many new first time advertisers and increased ad revenue. "Marketers won't abandon direct mail because its low overhead makes it too attractive." Advertisers also surveyed report that they will not change their overall marketing strategy.

Direct mail reduces distribution costs. "The lower the overhead, the lower the price - and we are in a price driven market." The name brands will expand into "relationship marketing" by following up dealer sales with direct mail and telemarketing campaigns promoting upgrades and peripheral sales. "More and more people are becoming comfortable with buying computer equipment by mail and telephone..."

As a general rule, the consumer has gotten much more sophisticated, knows about computers

and wants useful PCs, not cheap PCs. They are willing to pay more than the characteristic "$1,000 price point" to get the latest technology. A capable staff for dealing with novices is important, however. At the minimum, marketers need a 1-800 service number. Dell Computer even has 1-800 telecommunications for the deaf (TDD.)

"A few years ago it was unheard of to buy computers by mail. Only techno-wizards and crazed risk takers would give their credit-card numbers to order processors at the other end of a phone line somewhere in South Dakota. Now nearly everybody who needs a computer considers mail order, confident that exactly what they ordered will show up in a UPS truck by the end of the week." The biggest mail order companies are *Gateway 2000, Dell Computer, Northgate* and *Zeos International.* They sell high performance DOS systems for $1,000 to $2,000 at prices at or less than discount stores "...and you might be able to avoid paying sales tax."

In many cases, toll-free technical support, rapid replacement of defective parts and service of direct marketers surpasses that of a dealer. Some mail order companies (such as Dell and Gateway) include on-site service. Dell guarantees that if you call by 5 p.m. they will have a serviceman at your site the next business day at no cost as part of their one year warranty period.

"Discount stores have a bad reputation when it comes to service and for the most part, its deserved," says *Inc. Magazine. IntelliQuest,* a computer market researcher said their surveys "...shows buyers who haven't bought at a mass merchandiser perceive low satisfaction at mass outlets, and customers who have done so turn out to be even less satisfied."

Mobile computing with high-tech communications using PDAs (Personal Digital Assistants) will hit the market during Spring 1993. *Dataquest* (another computer researcher) said "The prevalent feeling is PDAs will be marketed to and welcomed by the business world. They will not have an enormous impact in the consumer market but should in the business market for experienced computer users." The PDA is envisioned as combining features of PCs, pen-based computers, fax machines, pagers, electronic organizers, cellular telephones and computer networks. They will borrow features from consumer electronic products currently on the market, including electronic organizers such as Sharp's "Wizard." The PDA is seen as the bridge between mobility and information access. "With a cellular-phone hookup, a PDA all of a sudden becomes the absolutely most useful device in the world. The first people who will need PDAs will be busy professionals who need to capture information, organize it and communicate it to other people. The appeal is that this hand-held device can go with you wherever you go. The device can sit in your briefcase or purse and still be a full extension of your desktop PC." The initial price will be around $1,000.

Advances in technology are taking place rapidly. Computer vendors are offering "investment protection" by developing PCs that can be easily upgraded by plugging in new chips, peripherals or by adding new software. Prices have dropped so much that the "pain of obsolescence" is easing. Technology that only a major corporation could afford is now available in equipment costing less than $2,000. New "memory hungry programs" that run on Microsoft Windows dictate that only 386 and 486 computers be considered. The minimum recommendation is a 386/25 MHz system with 4 MB memory (RAM) and a minimum of 100 MB hard drive with 200 MB being optimal. ***Hardware represents only 20% of PC cost. The bulk of the investment is hidden in training, support and service.***

New CPUs (microprocessors) are being introduced every 18 to 24 months. The new 586 chip is scheduled for Spring 1993 and the 686 is in development. Existing CPUs can now be upgraded by snapping in "*OverDrive*" processors and most major vendors are offering 486 machines with the *OverDrive* socket or replaceable CPU chips.

The days of having to choose between PCs and Macintoshes are fading. All Macs come with a utility called *Apple File Exchange* which allows them to read DOS files and diskettes. Popular DOS programs can be run on Macs by using software called *SoftPC* (available from *Insignia Solutions* at 1-800/848-7677.) "Why purchase Mac's when DOS systems comprise 85% of the market?"

Laser printers that cost $2,000 to $3,000 two years ago can now be purchased at less than $1,000. Ink-jet printers, which are slower and have near-typeset quality can be found for $400. "Though the venerable dot-matrix printer is still useful if you have one, it's hardly ever considered as a new purchase, except for printing forms with carbons." The minimum laser printer to consider has 300 dot resolution, 8 page-per-minute speed and 2 MB of memory - 4 MB if you do a lot of graphics."

• In our last issue (Nov. 15) we mentioned that it was legal to monitor cordless phone conversations. Two days later the *Wall Street Journal* ran a story about a ruling by the Fifth U.S. Circuit Court of Appeals finding that ***cordless phone users do indeed have a reasonable expectation of privacy*** if steps are taken in that direction.

"...the Fourth Amendment privacy right must be evaluated case-by-case, depending on such factors as whether the phone user had sought privacy by purchasing devices intended to foil eavesdroppers or by using phones known to be more difficult to tap." More than 18 million cordless phones are expected to be sold this year.

"The ruling is apparently the first in which a federal court has allowed cordless phone users any privacy rights. ...cellular phone conversations are already protected from eavesdropping even though many cellular phones technically are as easily intercepted as cordless phones," the Journal said.

"Cordless phones are treated differently because Congress decided in 1986 to write an exception to them. Amateur radio operators lobbied for the exclusion because they were afraid they would be arrested for listening to phone conversations that were accidently snagged..." *[Wall Street Journal, Nov. 17, 1992, page B13]*

• ***The DX Magazine, edited by Chod Harris, VP2ML, is changing from a monthly to publishing every two months.*** Reason? High publishing costs and not enough advertising to support monthly distribution. The good news is that each bimonthly issue will contain more pages.

• Both the ARRL-VEC and W5YI-VEC submitted reply comments in PR Docket 92-154 supporting the ***need to bring the Novice program under the VEC System.*** The League said that there is no statistical evidence to indicate that folding the Novice program into the VEC System would greatly reduce the number of available examination opportunities. They also emphasized that the proposal was not intended to address the integrity of Novice examiners which was never in question.

The W5YI-VEC reply comments stated that it appeared many commenters believed that Novices would have to travel to existing VEC System test sessions - when in reality General Class examiners could establish VEC System test sessions of their own.

W5YI-VEC also suggested that the General Class examiner be permitted to administer Technician Class examinations. This entry level is now the path of choice. "In fiscal 1990, 88% of first time amateurs came in at the Novice level. Fiscal 1992 statistics show that 73% of all examinees now enter at the Technician Class. ...There can be no doubt that the Technician Class needs VEs more than the Novice level. Allowing the General Class VE to examine Technicians would also demonstrate to the General Class amateur that the government and VEC community does indeed have confidence in their judgement to perform the examination function and that dealing with a VEC rather than direct with the government does not represent a loss of privileges. The new rules would add 'privileges.'" Reply comments closed on Nov. 9.

• In a last minute effort, the 102nd Congress passed and sent to Pres. Bush legislation that would ***forbid the manufacture or importation of radio scanners capable of accessing cellular telephone frequencies.*** The measure finalizes the 1986 electronic privacy laws which forbid listening to cellular conversations, but did not address the problem of cellular receiving equipment. The scanner amendment requires the FCC to deny equipment authorizations to scanners that do not comply with the new guidelines.

About 10 million Americans have cellular phones and new subscribers are signing up at the rate of 220,000 a month!

• The Clinton Administration plans to put ***Vice President Al Gore in charge of telecommunications policy*** and "...a governmental effort to oversee a massive overhaul in the nation's technological competitiveness, in part through an upgrade of the telecommunications infrastructure." Clinton also has called for a door-to-door fiber optic system. There is already all sorts of speculation as to who will head up the new FCC.

• The FCC has begun a thorough ***review of maritime communications requirements and trends*** "...the first step in bringing state-of-the-art communications capabilities to the Maritime Radio Service."

• FCC Engineer-in-Charge of the Norfolk Field Office, J.J. Freeman, chaired a seminar entitled ***"FCC Certification: Here's how to get it!"*** at the recently completed Fall '92 Comdex Computer Trade Show held in Las Vegas. Field Operations Bureau Chief, Richard M. Smith was a featured speaker. The program was part of the FCC's educational effort to alert computer marketers on agency standards concerning RF emissions.

• The Dayton Amateur Radio Assoc. is once again ***offering scholarships to hams graduating from high school in 1993.*** Applications and guidelines from: DARA Scholarship Committee, (45 Cinnamon Ct., Springboro, OH 45066)

• All of us are familiar with active repeaters, as we use them on 2 meters and the 440 band every day. ***But have you ever used a passive repeater?*** Probably yes, although you may not have been aware of it. Passive repeaters are billboard-sized radio wave reflectors. They reflect radio waves received from one direction and bounce them off in another direction. No electricity is required. Telephone companies use these devices to bounce radio waves in the 2 - 11 GHz region throughout mountainous terrain where direct point-to-point links are not available. So they bounce radio signals around the obstacles for little cost and negligible reduction of signal strength. The reflective aluminum surfaces are flat and can reflect multiple frequencies simultaneously. Passive repeaters can be up to 40 x 60 feet in size and up to three reflectors can help along a signal for up to 70 miles.

• In an interview for the November 1992 issue of Discover magazine, solar physicist Richard Altrock says ***the 11-year sunspot cycle really doesn't last that long;*** instead, the cycle is actually 19 years. He says the 11-year visible sunspot cycle is just the visible result of an invisible 19-year magnetic cycle on the sun.

During a sunspot cycle, the number of sunspots intensifies and they grow larger. Using proper filters or projection devices, a telescope allows us to view sunspots safely. Sunspot activity begins at approximately solar latitude 30° and gradually increases toward the solar equator, but as soon as these spots die off the process begins at 30° again. When this cycle begins, the 11-year cycle is said to begin.

But Dr. Altrock maintains that the start of this cycle means that magnetic activity in the corona (the solar atmosphere) has already been circulating for eight years. He says that he has traced coronal halos appearing eight years before sunspot cycles, and these halos show up at latitudes as high as 70° to 80°. The following years show them closer to the equator.

• Two researchers from the Georgia Tech Research Institute have ***invented a small (2-6 inches across), round, spiral antenna*** that is thin enough to be literally stuck anywhere.

Drs. Johnson Wang and Victor Tripp invented the device, which is thin enough at three-tenths of an inch to be built using common printed circuit board techniques to carve a sprial pathway out of a blank PC board.

One foreseen application for the spiral antenna (which looks like a miniature Frisbee) is to paste it on the roof of an automobile and capitalize on its 900% bandwidth to transmit and receive signals for several radio and mobile-telephone systems at the same time.

The scientists discovered that this antenna's radiation pattern fits inside a circumference of one wavelength, centered about the center of the spiral. The diamater of the entire antenna depends on the lowest usable frequency.

• Southern California Edison's entry float for the 1993 Rose Parade on January 1st will be the parade's ***first float that features robotic animation powered entirely by solar power.*** Entitled ***More Than Magic,*** the float features a wizard holding a spinning orb in his hand. Batteries on board will drive the 55-foot-long float (which weighs 20 tons), and provide a maximum power of 17.2 kW. The rotating globe contains ultra-modern solar cells on its surface, which will "seek out" the sun and force the ball to rotate to keep the cells lined up with the sun. The six-volt power supply for the 30-inch globe comes entirely from the solar cells.

• ***Measuring antenna performance at low frequencies*** can be a real headache, particularly if the antennas under scrutiny can't fit inside an RF-silent chamber such as an anechoic room. One answer to this dilemma is the scale-up/-scale-down approach, in which another antenna of identical style but physcially smaller size is examined and measured at its higher frequency, and the results scaled to fit its big brother.

Computers do most of the dirty work. This allows engineers to worry about other things, like E planes and H planes and how front-to-back ratios are affected when other parameters change. How does distance above ground alter the results? Would another director or reflector help? How about larger-diameter elements? Polar diagrams are drawn instanly on video screens. VSWR is calculated and displayed.

In the laboratory, antennas under test are scaled down to fit on the workbench. So while you may want to design a Yagi antenna for 80 meters, you couldn't even get it to fit in the garage. But a 1.5-GHz model of it will; in fact, it would look nice on the coffee table. The antenna under test is used as a transmitting device in this microwave range, and a separate reference receiving antenna listens and provides data.

Ultra-low power is necessary in these experiments — QRP levels around 1 mW is normal, and the distance between antennas is shifted with frequency. But usually they are less than a few meters apart.

Once satisfied with the design and performance of an antenna at this size, engineers can then confidently build the antenna at the

larger size and longer wavelength originally desired, with fewer surprises than doing it from scratch.

• With more and more handheld VHF/UHF RF devices such as cellular telephones and transceivers reaching consumers, more ***research is under way to learn more about the effects of RF upon human tissue.*** The current ANSI specifications recommend that, near the eyes, RF output below 1.5-GHz of seven watts or less is safe. Some scientists think that this belief should be reconsidered. What makes it tricky to rewrite the rules is there are no cut-and-dried borders of safety. Some evidence suggests (but doesn't prove) that tissue damage occurs only at specific frequencies and amplitudes. This is not easy to confirm repeatedly.

• ***Even hams can receive weather fax (WEFAX) inexpensively.*** We can find out how fast the winds are blowing, what temperatures around the country are, where strong thunderstorms are threatening, and so on. But the people who need this information the most — airline pilots — have been unable to receive this information directly while in flight ...until now. Lockheed's new software allows real-time weather satellite imagery to appear on a PC screen while in flight. A 20-inch dish antenna mounted on top of the airliner picks up NOAA data on 137 MHz.

• What is the ***fastest three-terminal semiconductor device in the world? It's called the modfet (MODulating Field-Effect Transistor).*** It can perform well at 60 GHz and 400 GHz batches are in the works. It features a low noise figure of 0.5 dB, which means it adds very little noise to an incoming signal. Because it is much more sensitive than ordinary devices, using it as an RF detector means you don't have to build an antenna as gigantic as usual. It works especially well at low temperatures. Who knows? You may soon be installing a modfet in your shack to get onto the microwave circuit.

• The *Society of Motion Picture and Television Engineers* (SMPTE) held a technical ***conference to adopt guidelines for a new standard of digital imaging.*** With digital signal processing and computers overtaking the industry, the engineers wanted to write rules that everyone would accept when it comes to enclosing television, film and computer images.

The average consumer is not very far away from hooking up a desktop mouse to the VCR and using the "point-and-click" system to program when to start recording. Videotape editing can be made much simpler using a word processor and a mouse to seamlessly splice images together. Digital soundtracks mean little or no signal degradation. Microsoft's new entry into this field is called *Video for Windows,* which television into PC's without adding expensive and complicated expansion boards. These new formats may soon show up in ATV and SSTV.

• Upset by replacing fuses? ***Would you like a fuse that heals itself?*** No, we're not talking about circuit breakers. A new type of resistor can protect itself and downwind circuitry from overload by increasing its resistance, thus decreasing current until the danger is over. This resistor is called a polymer positive temperature coefficient (PTC) resistor.

Should an increase in current suddenly occur, the PTC will increase its resistance to keep current low until power is cut off. After that, the PTC "heals" itself by returning to its original value. Such a resistor-fuse doesn't need replacement. Its small size means it can be stuffed into surface-mount components.

Apple Computer already uses PTC's in their Macintosh desktop computers to protect I/O devices. PTC's can also protect telephones, batteries and automotive electronics.

• ***What do you do when your computer can't accept data as fast as it's being transmitted?*** The answer is to store it in some way, if possible. But this has a drawback: it might slow down the rest of the system.

Some new digital television broadcasting techniques could include ways of directly storing data into a home VCR. With direct-broadcast-satellite (DBS), for example, much more data can be sent down than can possibly be stored on today's videocassette. One idea to counter this is to install a miniature hard-disk drive inside the VCR. It will record and store everything it hears, and can record it on the videotape later at a slower rate. This would be equivalent to recording a television program at high speed and playing it back later at its normal pace. You could get a full season of programs in just a few minutes, or a complete movie in just seconds.

This might lead to a new direction in home video. Instead of going to the store, one has only to call and select a program. Or maybe one could select it over the TV set. It is then sent to your home over a data link, recorded on the VCR's internal hard disk, and you can watch it later. The program is billed to your account.

Hams could use this technology in the future. In the GHz range, a complete videotape can be sent from ham to ham very quickly. How about a complete video database callbook?

HAM SENTENCED FOR JAMMING POLICE

On October 22, 1992, U.S. Magistrate Louisa Porter of San Diego, CA, sentenced ***Roy L. Eyman II, KC6TYR*** (Technician Class) also of San Diego to three years supervised probation and 250 hours of community service for jamming a San Diego Police channel.

In addition, as part of his sentencing, Eyman must deprogram and demodify all of his radio equipment to remove all public safety frequencies. Any public safety frequencies found programmed in his amateur equipment would constitute a violation of his probation and would subject him to resentencing.

The jamming incident occurred on Sept. 16, 1991, and consisted of broadcasting Beatles' music over the SDPD tactical operations channel. At the time of the jamming incident a SDPD sergeant, who is also an amateur radio operator, was carrying a hand-held amateur radio transceiver with a signal strength meter which he used to localize the source of the music. In a heavy fog, the officer walked up close to the strong signal and heard the music over his amateur radio hand-held unit as well as hearing it originating from Eyman's vehicle. The sergeant seized Eyman's amateur radio equipment.

The FCC's San Diego office assisted in the investigation which led to the conviction. The maximum penalty for unlicensed radio operation in a first conviction is a fine of up to $100,000 or imprisonment of up to one year, or both.

TELEPHONE CONSUMER PROTECTION ACT OF 1991

The FCC has amended Communications Act with new Rules implementing the Telephone Consumer Protection Act of 199. Effective December 20, 1992, new rules go into effect concerning telephone solicitation and FAX transmissions as a result of Congressional passage of enabling legislation called the *Telephone Consumer Protection Act of 1991,* Public Law 102-243 (which amends the Communications Act of 1934).

The TCPA mandated that the FCC prescribe specific regulations implementing its requirements, and after the usual NPRM notice-and-comment administrative procedure, the FCC released final regulations on October 14, 1992.

These new rules are intended to impose reasonable restrictions on those often annoying telemarketers--specifically those on an autodialer or prerecorded basis--and to allow consumers to avoid unwanted telephone solicitations without unduly limiting legitimate telemarketing practices.

In imposing restrictions on telephone solicitations principally to the homes of consumers (while at the same time preserving reasonable First-Amendment commercial speech rights of the business caller), the new rules, among other things:

- prohibit autodialed or prerecorded voice calls to residences (unless it's an emergency or the person being called consents) but "live", manually dialed, telemarketing calls are apparently okay;
- prohibits the transmission of unsolicited fax advertisements;
- require that fax machines manufactured as of December 21, 1992 contain an automatic ID feature so that the name and telephone number of the sender appears on each fax message;
- require that telephone solicitors identify with their own name, the name of their company, and the telephone number of their company;
- require that prerecorded solicitations disconnect the line of the person being called within 5 seconds of that person hanging up;
- most significantly for those of use who find these calls intrusive as to personal privacy, each company must maintain a do-not-call list of residential consumers who are not to be contacted by telephone. In addition, no telephone solicitations may be made before 8 am or after 9 pm (local time at the consumer's location.

If a telemarketer violates the TCPA or its related FCC regulations, an individual consumer can sue the telemarketer in state court to get an injunction against the telemarketer to stop any further phone calls. The consumer can also sue for actual monetary damages or $500, whichever is greater. The FCC can take additional action against the telemarketer for non-compliance by assessing monetary forfeitures for violations.

As with all government regulations, there are exceptions. Calls that are non-commercial in nature do not have to comply with the TCPA or its enabling rules. Nor do calls placed by non-profit organizations. Nor are business calls in which an already existing business relationship exists between the parties. Calls made by any party within do not transmit unsolicited advertisements are also outside the statute.

Generally, however, in terms of a call from a business to a residence, the following applies: A prerecorded telemarketing call (including a random, autodialed call) to your home telephone, is prohibited by these new rules as of December 20, if the call is made by a profit-making business entity, if the call is trying to sell you something, and you haven't previously given your consent to accept such calls and there is no previous business relationship with the caller.

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